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Worldwide Petrochemical Directory- 1998

Thomas Register of American Manufacturers and Thomas Register Catalog File- 2003 Vols. for 1970-71 includes manufacturers' catalogs.

Thomas' Register of American Manufacturers- 2002

Adsorption Analysis: Equilibria And Kinetics (With Cd Containing Computer Matlab Programs)-Duong D Do 1998-09-22 This book covers topics of equilibria and kinetics of adsorption in porous media. Fundamental equilibria and kinetics are dealt with for homogeneous as well as heterogeneous particles. Five chapters of the book deal with equilibria and eight chapters deal with kinetics. Single component as well as multicomponent systems are discussed. In kinetics analysis, we deal with the various mass transport processes and their interactions inside a porous particle. Conventional approaches as well as the new approach using Maxwell-Stefan equations are presented. Various methods to measure diffusivity, such as the Differential Adsorption Bed (DAB), the time lag, the diffusion cell, chromatography, and the batch adsorber methods are also covered by the book. It can be used by lecturers and engineers who wish to carry out research in adsorption. A number of programming codes written in MatLab language are included so that readers can use them directly to better understand the behavior of single and multicomponent adsorption systems.

Materials Handbook-John A. Vaccari 2002-07-09 The Materials Handbook is an encyclopedic, A-to-Z organization of all types of materials, featuring their key performance properties, principal characteristics and applications in product design. Materials include ferrous and nonferrous metals, plastics, elastomers, ceramics, woods, composites, chemicals, minerals, textiles, fuels, foodstuffs and natural plant and animal substances --more than 13,000 in all. Properties are expressed in both U.S. customary and metric units and a thorough index eases finding details on each and every material. Introduced in 1929 and often known simply as "Brady's," this comprehensive, one-volume, 1244 page encyclopedia of materials is intended for executives, managers, supervisors, engineers, and technicians, in engineering, manufacturing, marketing, purchasing and sales as well as educators and students. Of the dozens of families of materials updated in the 15th Edition, the most extensive additions pertain to adhesives, activated carbon, aluminides, aluminum alloys, catalysts, ceramics, composites, fullerenes, heat-transfer fluids, nanophase materials, nickel alloys, olefins, silicon nitride, stainless steels, thermoplastic elastomers, titanium alloys, tungsten alloys, valve alloys and welding and hard-facing alloys. Also widely updated are acrylics, brazing alloys, chelants, biodegradable plastics, molybdenum alloys, plastic alloys, recycle plastics, superalloys, supercritical fluids and tool steels. New classes of materials added include aliphatic polyketones, carburizing secondary-hardening steels and polyarylene ether benzimidazoles. Carcinogens and materials likely to be cancer-causing in humans are listed for the first time.

Catalytic Removal of Volatile Organic Compounds-Jean-François Lamonier 2018-09-28 This book is a printed edition of the Special Issue "Catalytic Removal of Volatile Organic Compounds" that was published in Catalysts

Engineering Data Book Fps- 2004

Emerging Research in Science and Engineering Based on Advanced Experimental and Computational Strategies-Felipe de Almeida La Porta 2020-01-02 In this book, the authors discuss some of the main challenges and new opportunities in science and engineering research, which involve combining computational and experimental approaches as a promising strategy for arriving at new insights into composition-structure-property relations, even at the nanoscale. From a practical standpoint, the authors show that significant improvements in the material/biomolecular foresight by design, including a fundamental understanding of their physical and chemical properties, are vital and will undoubtedly help us to reach a new technological level in the future.

Molecular Sieve Zeolites-Edith M. Flanigen 1971

Basic Principles of Membrane Technology-J. Mulder 2012-12-06 III . 2 Preparation of synthetic membranes 72 III . 3 Phase inversion membranes 75 III . 3. 1 Preparation by evaporation 76 III . 3. 2 Precipitation. from the vapour phase 76 III . 3. 3 Precipitation by controlled evaporation 76 Thermal precipitation 76 III . 3. 4 III . 3. 5 Immersion precipitation 77 Preparation techniques for immersion precipitation 77 III . 4 Flat membranes 77 III . 4. 1 78 III . 4. 2 Tubular membranes 81 III . 5 Preparation techniques for composite membranes 82 III . 5. 1 Interfacial polymerisation Dip-coating 83 III . 5. 2 III . 5. 3 Plasma polymerisation 86 III . 5. 4 Modification of homogeneous dense membranes 87 III . 6 Phase separation in polymer systems 89 III . 6. 1 Introduction 89 III . 6. 1. 1 Thermodynamics 89 III . 6. 2 Demixing processes 99 III . 6. 2. 1 Binary mixtures 99 III . 6. 2. 2 Ternary systems 102 III . 6. 3 Crystallisation 104 III . 6. 4 Gelation 106 III . 6. 5 Vitriification 108 III . 6. 6 Thermal precipitation 109 III . 6. 7 Immersion precipitation 110 III . 6. 8 Diffusional aspects 114 III . 6. 9 Mechanism of membrane formation 117 III . 7 Influence of various parameters on membrane morphology 123 III . 7. 1 Choice of solvent-nonsolvent system 123 III . 7. 2 Choice of the polymer 129 III . 7. 3 Polymer concentration 130 III . 7. 4 Composition of the coagulation bath 132 III . 7. 5 Composition of the casting solution 133 III . 7.

Petrochemical Processes-Alain Chauvel 1989

Adsorption, Surface Area, and Porosity-Sidney John Gregg 1967 The principal aim of the second edition of this book remains the same as that of the first edition: to give a critical exposition of the use of the adsorption methods for the assessment of the surface and pore size distribution of finely divided and porous solids.

Modern Drying Technology, Volume 1-Evangelos Tsotsas 2011-02-10 This five-volume handbook provides a comprehensive overview of all important aspects of modern drying technology, including only advanced results. In this first volume diverse model types for the drying of products and the design of drying processes (short-cut methods, homogenized, pore network, and continuous thermo-mechanical approaches) are treated, along with computational fluid dynamics, population balances, and process systems simulation tools. Emphasis is put on scale transitions.

Zeolites in Catalysis-Jiří Čejka 2017-06-07 Covering the breadth of zeolite chemistry and catalysis, this book provides the reader with a complete introduction to field, covering synthesis, structure, characterisation and applications. Beginning with the history of natural and synthetic zeolites, the reader will learn how zeolite structures are formed, synthetic routes, and experimental and theoretical structure determination techniques. Their industrial applications are covered in-depth, from their use in the petrochemical industry, through to fine chemicals and more specialised clinical applications. Novel zeolite materials are covered, including hierarchical zeolites and two-dimensional zeolites, showcasing modern developments in the field. This book is ideal for newcomers who need to get up to speed with zeolite chemistry, and also experienced researchers who will find this a modern, up-to-date guide.

Handbook of Liquefied Natural Gas-Saeid Mokhatab 2013-10-15 Liquefied natural gas (LNG) is a commercially attractive phase of the commodity that facilitates the efficient handling and transportation of natural gas around the world. The LNG industry, using technologies proven over decades of development, continues to expand its markets, diversify its supply chains and increase its share of the global natural gas trade. The Handbook of Liquefied Natural Gas is a timely book as the industry is currently developing new large sources of supply and the

technologies have evolved in recent years to enable offshore infrastructure to develop and handle resources in more remote and harsher environments. It is the only book of its kind, covering the many aspects of the LNG supply chain from liquefaction to regasification by addressing the LNG industries' fundamentals and markets, as well as detailed engineering and design principles. A unique, well-documented, and forward-thinking work, this reference book provides an ideal platform for scientists, engineers, and other professionals involved in the LNG industry to gain a better understanding of the key basic and advanced topics relevant to LNG projects in operation and/or in planning and development. Highlights the developments in the natural gas liquefaction industries and the challenges in meeting environmental regulations Provides guidelines in utilizing the full potential of LNG assets Offers advices on LNG plant design and operation based on proven practices and design experience Emphasizes technology selection and innovation with focus on a "fit-for-purpose design Updates code and regulation, safety, and security requirements for LNG applications

Adsorption Technology and Design-W John Thomas, FEng 1998-05-11 The aim of this book is to provide all those involved in designing and running adsorption processes with a guide to adsorption technology and design.

Fundamentals of Natural Gas Processing-Arthur J. Kidnay 2006-06-21 Fundamentals of Natural Gas Processing explores the natural gas industry from the wellhead to the marketplace. It compiles information from the open literature, meeting proceedings, and experts to accurately depict the state of gas processing technology today and highlight technologies that could become important in the future. This book cov

20th European Symposium of Computer Aided Process Engineering-S. Pierucci 2010-06-03 ESCAPE-20 is the most recent in a series of conferences that serves as a forum for engineers, scientists, researchers, managers and students from academia and industry to present and discuss progress being made in the area of "Computer Aided Process Engineering" (CAPE). CAPE covers computer-aided methods, algorithms and techniques related to process and product engineering. The ESCAPE-20 scientific program reflects the strategic objectives of the CAPE Working Party: to check the status of historically consolidated topics by means of their industrial application and to evaluate their emerging issues. * Includes a CD that contains all research papers and contributions * Features a truly international scope, with guest speakers and keynote talks from leaders in science and industry * Presents papers covering the latest research, key topical areas, and developments in computer-aided process engineering (CAPE)

Zeolite Synthesis-Mario L. Occelli 1989 This volume is a complete progress report on the various aspects of zeolite synthesis on a molecular level. It provides many examples that illustrate how zeolites can be crystallized and what the important parameters are that control crystallization. Forty-two chapters cover such topics as: crystallization techniques; gel chemistry; crystal size and morphology; the role of organic compounds; and novel synthesis procedures. It offers a complete review of zeolite synthesis as well as the latest finding in this important field. Contains benchmark contributions from many notable pioneers in the field, including R.M. Barrer, H. Robson, and Robert Milton.

Catalysis in Petroleum and Petrochemical Industries-Krishna G. Bhattacharyya 2005 Focuses on the use of catalysis in the Oil Refineries and in the Petrochemical Industries with particular reference to understanding the basic processes, development of appropriate catalysts, their characterization techniques, and laboratory scale studies on important chemical reactions having relevance to the Petroleum Industry.

Catalysis and Zeolites-Jens Weitkamp 2013-04-17 Zeolites occur in nature and have been known for almost 250 years as aluminosilicate minerals. Examples are clinoptilolite, mordenite, offretite, ferrierite, erionite and chabazite. Today, most of these and many other zeolites are of great interest in heterogeneous catalysis, yet their naturally occurring forms are of limited value as catalysts because nature has not optimized their properties for catalytic applications and the naturally occurring zeolites almost always contain undesired impurity phases. It was only with the advent of synthetic zeolites in the period from about 1948 to 1959 (thanks to the pioneering work of R. M. Barrer and R. M. Milton) that this class of porous materials began to play a role in catalysis. A landmark event was the introduction of synthetic faujasites (zeolite X at first, zeolite Y slightly later) as catalysts in fluid catalytic cracking (FCC) of heavy petroleum distillates in 1962, one of the most important chemical processes with a worldwide capacity of the order of 500 million t/a. Compared to the previously used amorphous silica-alumina catalysts, the zeolites were not only orders of magnitude more active, which enabled drastic process engineering improvements to be made, but they also brought about a significant increase in the yield of the target product, viz. motor gasoline. With the huge FCC capacity worldwide, the added value of this yield enhancement is of the order of 10 billion US \$ per year.

The Scientific Exploration of Venus-Fredric W. Taylor 2014-09-22 A leading Venus researcher explains in a friendly non-technical style what we know through our investigations of Earth's 'twin' planet.

Zeolites and Catalysis-Jiri Cejka 2010-05-27 This indispensable two-volume handbook covers everything on this hot research field. The first part deals with the synthesis, modification, characterization and application of catalytic active zeolites, while the second focuses on such reaction types as cracking, hydrocracking, isomerization, reforming and other industrially important topics. Edited by a highly experienced and internationally renowned team with chapters written by the "Who's Who" of zeolite research.

The Little Adsorption Book-Diran Basmadjian 2018-02-06 This unique approach to the basic concepts of adsorption is written for students, engineers, scientists, and others who need a clear presentation of adsorption processes. Unlike other texts on this subject, which are written for the specialist and rely heavily on advanced mathematics, this unique book helps you solve everyday problems in applications of adsorption, without complex mathematics or computers. The author, a recognized expert in the field, gives you a quick introduction to the underlying physics of adsorption and explains how to apply adsorption to solve analytical and design problems. Rich with practical examples and enhanced by illustrations that support the text, this refreshingly straightforward presentation helps you cut through the complexities of adsorption to find fast answers to pressing real-world questions.

Natural Zeolites-G. V. T'Siřiřishvili 1992

Adsorption: Science and Technology-A.E. Rodrigues 2012-12-06 Proceedings of the NATO Advanced Study Institute, Vimeiro, Portugal, July 17-29, 1988

Materials Science of Membranes for Gas and Vapor Separation-Benny Freeman 2006-05-12 Materials Science of Membranes for Gas and Vapor Separation is a one-stop reference for the latest advances in membrane-based separation and technology. Put together by an international team of contributors and academia, the book focuses on the advances in both theoretical and experimental materials science and engineering, as well as progress in membrane technology. Special attention is given to comparing polymer and inorganic/organic separation and other emerging applications such as sensors. This book aims to give a balanced treatment of the subject area, allowing the reader an excellent overall perspective of new theoretical results that can be applied to advanced materials, as well as the separation of polymers. The contributions will provide a compact source of relevant and timely information and will be of interest to government, industrial and academic polymer chemists, chemical engineers and materials scientists, as well as an ideal introduction to students.

Mesoporous Zeolites-Javier GarcĀa-MartĀnez 2015-05-26 Authored by a top-level team of both academic and industrial researchers in the field, this is an up-to-date review of mesoporous zeolites. The leading experts cover

novel preparation methods that allow for a purpose-oriented fine-tuning of zeolite properties, as well as the related materials, discussing the specific characterization methods and the applications in close relation to each individual preparation approach. The result is a self-contained treatment of the different classes of mesoporous zeolites. With its academic insights and practical relevance this is a comprehensive handbook for researchers in the field and related areas, as well as for developers from the chemical industry.

Pressure Swing Adsorption-Douglas Morris Ruthven 1994

Preparation of Solid Catalysts-Gerhard Ertl 2008-08-29 Solid catalysts play a fundamental role in all areas between basic research and industrial applications. This book offers a large amount of information about the preparation of solid catalysts. All types of solid catalysts and all important aspects of their preparation are discussed. The highly topical contributions are written by leading experts in disciplines ranging from solid state, interface and solution chemistry to industrial engineering. The straightforward presentation of the material and the comprehensive coverage make this book an essential and indispensable tool for every scientist and engineer working with solid catalysts.

European Symposium on Computer Aided Process Engineering - 10-S. Pierucci 2000-05-10 This book includes papers presented at ESCAPE-10, the 10th European Symposium on Computer Aided Process - Engineering, held in Florence, Italy, 7-10th May, 2000. The scientific program reflected two complementary strategic objectives of the 'Computer Aided Process Engineering' (CAPE) Working Party: one checked the status of historically consolidated topics by means of their industrial application and their emerging issues, while the other was addressed to opening new windows to the CAPE audience by inviting adjacent Working Parties to cooperate in the creation of the technical program. The former CAPE strategic objective was covered by the topics: Numerical Methods, Process Design and Synthesis, Dynamics & Control, Process Modeling, Simulation and Optimization. The latter CAPE strategic objective derived from the European Federation of Chemical Engineering (EFCE) promotion of scientific activities which autonomously and transversely work across the Working Parties' terms of references. These activities enhance the exchange of the know-how and knowledge acquired by different Working Parties in homologous fields. They also aim to discover complementary facets useful to the dissemination of tools and of novel procedures. As a consequence, the Working Parties 'Environmental Protection', 'Loss Prevention and Safety Promotion' and 'Multiphase Fluid Flow' were invited to assist in the organization of sessions in the area of: A Process Integrated Approach for: Environmental Benefit, Loss Prevention and Safety, Computational Fluid Dynamics. A total of 473 abstracts from all over the world were evaluated by the International Scientific Committee. Out of them 197 have been finally selected for the presentation and reported into this book. Their authors come from thirty different countries. The selection of the papers was carried out by twenty-eight international reviewers. These proceedings will be a major reference document to the scientific and industrial community and will contribute to the progress in Computer Aided Process Engineering.

Environmental and Materials Engineering-Yun Wu 2013-02-13 Selected, peer reviewed papers from the 2012 International Conference on Environmental and Materials Engineering (EME 2012), December 9-10, 2012, Seoul, Korea

Advances in Natural Gas Emerging Technologies-Hamid Al-Megren 2017-08-02 Natural gas has become the world's primary supply of energy in the last decades. It is naturally occurring from the decomposition of organic materials, over the past 150 million years ago, into hydrocarbons. It is considered one of the most useful energy sources and the fastest growing energy source in the world. This book presents state-of-the-art advances in natural gas emerging technologies. It contains ten chapters divided into three sections that cover natural gas technology, utilization, and alternative.

Fundamentals of Natural Gas Processing, Third Edition-Arthur J. Kidnay 2019-10-01 Offering indispensable insight from experts in the field, Fundamentals of Natural Gas Processing, Third Edition provides an introduction to the gas industry and the processes required to convert wellhead gas into valuable natural gas and hydrocarbon liquids products including LNG. The authors compile information from the literature, meeting proceedings, short courses, and their own work experiences to give an accurate picture of where gas processing technology stands today as well as to highlight relatively new technologies that could become important in the future. The third edition of this bestselling text features updates on North American gas processing and changing gas treating requirements due to shale gas production. It covers the international nature of natural gas trade, LNG, economics, and more. To help nonengineers understand technical issues, the first 5 chapters present an overview of the basic engineering concepts applicable throughout the gas, oil, and chemical industries. The following 15 chapters address natural gas processing, with a focus on gas plant processes and technologies. The book contains 2 appendices. The first contains an updated glossary of gas processing terminology. The second is available only online and contains useful conversion factors and physical properties data. Aimed at students as well as natural gas processing professionals, this edition includes both discussion questions and exercises designed to reinforce

important concepts, making this book suitable as a textbook in upper-level or graduate engineering courses.

Handbook of Natural Gas Transmission and Processing-Saeid Mokhatab 2017-09-01 Handbook of Natural Gas Transmission and Processing gives engineers and managers complete coverage of natural gas transmission and processing in the most rapidly growing sector to the petroleum industry. The authors provide a unique discussion of new technologies that are energy efficient and environmentally appealing at the same time. It is an invaluable reference on natural gas engineering and the latest techniques for all engineers and managers moving to natural gas processing as well as those currently working on natural gas projects. Provides practicing engineers critical information on all aspects of gas gathering, processing and transmission First book that treats multiphase flow transmission in great detail Examines natural gas energy costs and pricing with the aim of delivering on the goals of efficiency, quality and profit

Molecular Sieves-Rosemarie Szostak 2013-06-29 From a report by a Lieutenant Colonel W.A. Ross (Chern. News, Nov.15, 1878, p. 236). Progress did not accelerate during the next 50 years. McBain, in his classic 1932 book, The Sorption of Gases by Solids, devoted a chapter to sorption by chabasite, other zeolites, and permeable crystals. McBain remarked that "great interest attaches to the finding of Weigel and Steinhoff [O. Weigel and E. Steinhoff, Z. Krist., 61, 125 (1925)] that chabasite rapidly sorbs the vapors of water, methyl and ethyl alcohol and formic acid, whereas acetone, ether and benzene are largely excluded. The significance of their results was pointed out by McBain [J.W. McBain, Colloid. Symp. Mon., 20, 1 (1926)] and recognized by all later writers. It is evident that the partially dehydrated chabasite forms a nearly perfect molecular sieve or a semipermeable membrane of extremely regular structure ... ". While the significance of the above observation may have been recognized, it had little impact. Thus, an eminent pioneer in the synthesis and characterization of zeolites, Professor R.M. Barrer, spent nearly two decades (following his Ph. D. studies in the 1930s) developing a firm foundation for the rapid growth in scientific understanding and industrial applications of zeolites which has taken place during the last 30 years.

Separation Process Principles with Applications Using Process Simulators, 4th Edition-J. D. Seader 2016-01-11 Separation Process Principles with Applications Using Process Simulator, 4th Edition is the most comprehensive and up-to-date treatment of the major separation operations in the chemical industry. The 4th edition focuses on using process simulators to design separation processes and prepares readers for professional practice. Completely rewritten to enhance clarity, this fourth edition provides engineers with a strong understanding of the field. With the help of an additional co-author, the text presents new information on bioseparations throughout the chapters. A new chapter on mechanical separations covers settling, filtration and centrifugation including mechanical separations in biotechnology and cell lysis. Boxes help highlight fundamental equations. Numerous new examples and exercises are integrated throughout as well.

BUYERS' GUIDE 86- 1985

Handbook of Separation Process Technology-Ronald W. Rousseau 1987-05-13 Surveys the selection, design, and operation of most of the industrially important separation processes. Discusses the underlying principles on which the processes are based, and provides illustrative examples of the use of the processes in a modern context. Features thorough treatment of newer separation processes based on membranes, adsorption, chromatography, ion exchange, and chemical complexation. Includes a review of historically important separation processes such as distillation, absorption, extraction, leaching, and crystallization and considers these techniques in light of recent developments affecting them.

Gas Adsorption Equilibria-Jürgen U. Keller 2006-06-23 This book is intended to present for the first time experimental methods to measure equilibria states of pure and mixed gases being adsorbed on the surface of solid materials. It has been written for engineers and scientists from industry and academia who are interested in adsorption based gas separation processes and/or in using gas adsorption for characterization of the porosity of solid materials. This book is the result of a fruitful collaboration of a theoretician (JUK) and an experimentalist (RS) over more than twelve years in the field of gas adsorption systems at the Institute of Fluid- and Thermodynamics (IFT) at the University of Siegen, Siegen, Germany. This collaboration resulted in the development of several new methods to measure not only pure gas adsorption, but gas mixture or coadsorption equilibria on inert porous solids. Also several new theoretical results could be achieved leading to new types of so-called adsorption isotherms based on the concepts of molecular association and - phenomenologically speaking - on that of thermodynamic phases of fractal dimension. Naturally, results of international collaboration of the authors over the years (1980-2000) also are included.